

CLAIMS

We claim:

1. A system for testing semiconductor devices, comprising:
a force retainer mounted on a material handler; and
5 a force locator interposed between the force retainer and a circuit board and, together
with the force retainer, adapted to prevent the circuit board from bending.
2. The system of claim 1 where the force retainer comprises:
outer and inner rings; and
10 a plurality of ribs connecting the outer ring to the inner ring.
3. The system of claim 1
where the system comprises a test head including a plurality of connectors;
where the force retainer comprises a plurality of openings between adjacent ribs; and
15 where the plurality of connectors protrude through the plurality of openings.
4. The system of claim 1 where the force retainer is steel.
5. The system of claim 1 where the force retainer is cast iron.
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6. The system of claim 1 where the force locator is mounted on the circuit board.
7. The system of claim 1 where the force locator has a same shape as a probe
head.
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8. The system of claim 1 where the force locator is adjustable to accommodate
spacing limitations between the circuit board and the force retainer.
9. A tester, comprising:
30 a top plate on a material handler; and
a force retainer fixedly mounted on the top plate, the force retainer including an outer
ring connected to an inner ring by a plurality of ribs.

10. The tester of claim 9 comprising
an interface unit removably mounted on the force retainer and including a force
locator, the force locator being fixedly mounted on a circuit board.

5 11. The tester of claim 10 where the interface unit comprises a probe head
attached to the circuit board on one side and having contact pins protruding from another
side.

10 12. The tester of claim 11 where the force locator is a same shape as the probe
head.

13. The tester of claim 10 where the interface unit comprises a circuit board
stiffener ring mounted on the circuit board and surrounding the force locator.

15 14. The tester of claim 9 comprising
a test head adapted to provide electrical signals to the device under test through at
least one connector, the at least one connector protruding from at least one open portion
between adjacent ribs.

20 15. A method of testing semiconductor devices, comprising:
fixedly mounting a force retainer to a material handler; and
removably mounting an interface unit to the force retainer.

25 16. The method of claim 15 comprising mounting a force retainer on the interface
unit.

17. The method of claim 15 comprising providing the force retainer with inner and
outer rings connected with a plurality of ribs.

30 18. The method of claim 15 comprising:
positioning a test head on one side of the handler;
providing the test head with at least one connector; and
threading the connector through the force retainer.

19. The method of claim 10 comprising:

bringing a device under test into contact with the interface unit thereby creating a probe force;

5 directing the probe force from the interface unit to the force retainer; and
retaining the probe force using the force retainer.

20. The method of claim 10 comprising distributing a probe force on the force
retainer using the force locator.

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